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TECH TALK 0052A
AVIATION TIPS
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When producing equipment for the aviation industry, there are certain materials that must not come into contact with the product being delivered (Aviation Gasoline, Jet A1, etc.) as they may have adverse effects on the quality of the product.

Below is a list of recommendations for the manufacturing of equipment used in aviation applications.

- *Gasket materials:* Air BP has produced a specification for gasket materials used in aviation fuel systems in carbon steel, stainless steel and aluminium pipework. The only approved material at the moment is Klinger SIL C4430.

****Note: No liquid sealant is to be used on flanges.**

- *Raw Materials:* No yellow metals (i.e. Copper, Brass etc), Zinc rich alloys or Cadmium alloys should come into contact with aviation fuel. All plating with these materials should also be kept clear from aviation fuel. No un-plated steel, except Cast Steel.
- *Swivels:* Only approval lubricants to be used for swivels and other mechanisms. Once lubricated, all grease nipples must be removed. Typical greases are Molykote FS 3452 (BP), Snow White Petrolatum Jelly (Shell), Aviation Grease S7108 (Shell). Check for each oil company.
- *Thread Sealant:* All fittings are to be sealed with Blue Loctite No. 243. No other material is suitable.
- *Teflon Tape:* Avoid using PTFE (Teflon) tape where possible and use Loctite 243. If Teflon tape must be used, ensure it is correctly wrapped around the thread and ensure that no tape overlaps the last thread on the fitting.
- *O-Rings:* Buna-N O-rings should not be used in applications where the delivered product is AVGAS. In this instance, use Viton O-Rings instead.
- *Filter elements:* Do not handle any filter elements with your bare hands or you will damage the filter screen. Use Nitrile powder free gloves from Ansell, "Touch N Tuff®", product code 92-600.
- *Testing:* Do not test equipment or tankers with water unless (a) it is unavoidable and (b) it can be thoroughly dried or flushed afterwards.
- *Handling:* Due to the risk of particulate, or lint contamination, do not service aviation fuel handling components with bare hands, or gloved hands other than Ansell "Touch N Tuff®" Nitrile powder free gloves, product code 92-600. Only the gloves specified, or equivalent must be used. If in doubt, contact Ansell Australia on 1800 337 041



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- *Component Lubrication:* New fuel handling components, which require pressure lubrication with grease or oil, should not be fitted to fuelling equipment. For such items, which still exist, the following advice should be followed
 - i. Remove any pressure lubrication fittings and replace them with removable blanking plugs
 - ii. Introduce a program for a regular lubrication. An interval of six months between lubrications is suggested.
 - iii. Where grease is required, use approval types for each oil company. Overgreasing must be avoided.
 - iv. Where oil is required, use mineral oil (either AeroShell or motor oil). This is best achieved by dismantling the component, cleaning off old lubricant and using the minimum of new-lubricant-before-re-assembling.

Alternatively the blanking plugs should be removed and minimum of oil applied into the orifice before replacing the blanking plug.

Great care must be taken in respect of swivels to differentiate between those, which require oil/grease lubrication and those, which are designed to run in fuel. The latter will have blanking plugs, which could be mistaken for lubricating ports; but these are for assembly purposes only.

Updated December 2007